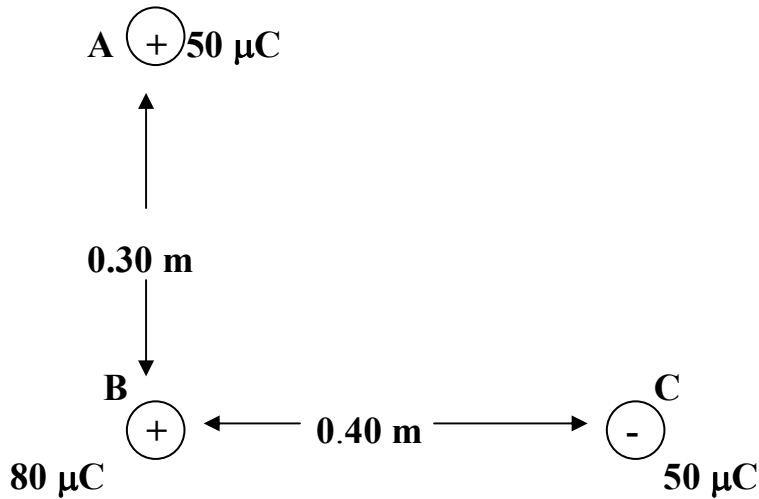
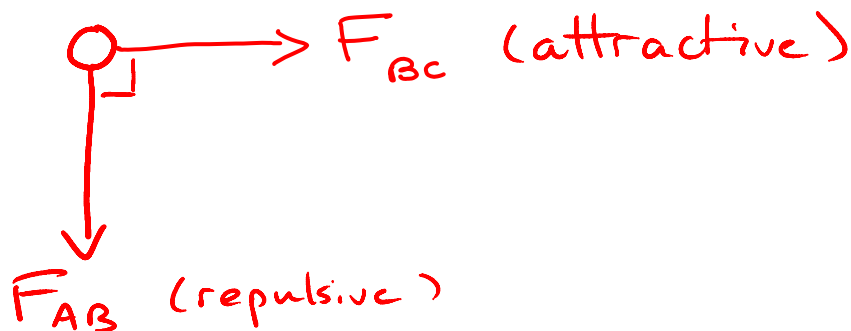


Example 4. Three charges are laid out as in the following diagram. Find the resultant force due to the other two charges on charge B.



Start with f.b.d. on "B":



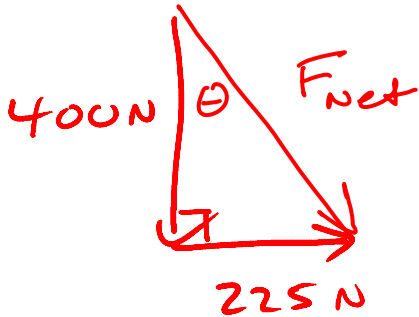
$$F_{AB} = \frac{(9 \times 10^9)(50 \times 10^{-6})(80 \times 10^{-6})}{.3^2}$$

$$= 400 \text{ N } \downarrow$$

$$F_{BC} = \frac{(9 \times 10^9)(80 \times 10^{-6})(50 \times 10^{-6})}{.4^2}$$

$$= 225 \text{ N } \rightarrow$$

Now draw a forces triangle to find F_{net} :



$$F_{\text{net}} = \sqrt{400^2 + 225^2}$$
$$= 459 \text{ N}$$

$$\theta = \tan^{-1} \left[\frac{225}{400} \right]$$
$$= 29^\circ$$

$$\therefore \boxed{F_{\text{net}} = 4.6 \times 10^2 \text{ N @ } 29^\circ \text{ from line A-B}}$$